

Mechanical Engineering

Index of 2006 Articles

Abrams, Michael

Different Strokes A few dedicated men are setting wild new speed records using that age-old technology—their legs. October, p. 42.

The Goood Foot. August, p. 64.

Nano-Scale Armor Molecular hinges, electrorheological fluids—will they protect tomorrow's infantry? September, p. 34.

Put a Nozzle on It Teeth-like tabs are turning down the volume on jet cacophony. November, p. 38.

Simply Complex CAM keeps speed and efficiency at their max in today's world of high-speed multitasking machines. January, p. 28.

Sphere of Heights. May, p. 34.

The Teardown Artist An engineer keeps his clients one step ahead by taking a deep look into their competitors' products. August, p. 38.

Brown, Alan S.

Fair Game The spirit of play, business, or both make a destination of one of the world's technological showplaces. June, p. 35.

Heading Off Premature Failure New software can help you unearth design and manufacturing issues before they snowball into big warranty problems. August, p. 32.

Hip New World Once reserved for the aging, this achievement of mechanical engineering is offered to young adults who still want to jog, run, and play golf. October, p. 28.

Lies Your ERP System Tells You Enterprise resource planning has always had a hard time bridging the gap between corporate offices and the factory floor. Here's why. March, p. 36.

Maglev Goes to Work A mixer taking advantage of high-temperature superconductors enters the pharmaceutical market. June, p. 38.

MEMS Across the Valley of Death Microelectromechanical systems are taking the world by storm, but only a handful of aerospace applications are now flying. That may be about to change. April, p. 26.

More Than 12,000 Miles to the Gallon. January, p. 64.

Staying Alive Forget competing with China on price. These U.S. manufacturers have found ways to earn their bread. January, p. 22.

Storm Warning Katrina and Rita pummeled the Gulf of Mexico's oil and gas producers. What can they do to keep it from happening again? June, p. 24.

Tearing Down the Nearly Invisible What happens when simply lifting the lid can destroy the very thing you want to inspect? Reverse engineering in the silicon world presents all sorts of unique challenges. August, p. 34.

Tiny Tubes Tap Competitive Edge. September, p. 64.

Too Hot for Comfort As server power grows, so does the need to find more efficient ways to keep computers cool. December, p. 32.

Virtual OR Engineers are developing systems that enable future healers to practice surgery and other skills on model patients in simulated spaces. November, p. 32.

Connolly, John F.

One Step Back, One Giant Leap Forward For NASA engineers planning to send humans back to the moon, the best mission design was staring them right in the face. May, p. 26.

Decuzzi, Paolo, and Mauro Ferrari

Fantastic Voyages Nanodevices in development today promise to give medicine capabilities that were once purely in the realm of fiction. October, p. 24.

Easton, Peter

Finding More Water A desalination roadmap seeks technological solutions to make brackish water drinkable. September, p. 42.

Hutchinson, Harry

Easy on the Gas Research aims to make the land of the automobile run more efficiently. July, p. 26.

Heads Up. December, p. 80.

It's in the Timing Clean, fast, and compact, a means of destroying dangerous medical waste went years without takers. July, p. 42.

Keeping Above Water. October, p. 72.

NaCl of the Earth Salt deposits complicate the picture in the search for undersea oil; high-power computer imaging helps sort things out. March, p. 43.

No Strings Attached. June, p. 64.

An Open-Sesame for Budding Engineers. February, p. 64.

A Short Drive Into Space. March, p. 64.

To Get to the Other Side Sometimes you have to plan how to cross your bridges before you come to them. April, p. 40.

Kania, Eugene

Supply and Demand To manage resources, first know your people and their skills; then how many hours the workload will take. February, p. 25.

LaMarca, Robert

The Free Range Idealists or realists? Some big guns are taking a shot at open-source product development. March, p. 26.

Langston, Lee S.

Campus Heat One university decides to practice what it teaches about thermodynamics. December, p. 28.

Crown Jewels These crystals are the gems of turbine efficiency. February, p. 31.

Wild Blue Yonder After more than 50 years of intense research, designers are still pushing the gas turbine to new heights of performance. May, p. 36.

Mechanical Engineering

Index of 2006 Articles

Abrams, Michael

Different Strokes A few dedicated men are setting wild new speed records using that age-old technology—their legs. October, p. 42.

The Goood Foot. August, p. 64.

Nano-Scale Armor Molecular hinges, electrorheological fluids—will they protect tomorrow's infantry? September, p. 34.

Put a Nozzle on It Teeth-like tabs are turning down the volume on jet cacophony. November, p. 38.

Simply Complex CAM keeps speed and efficiency at their max in today's world of high-speed multitasking machines. January, p. 28.

Sphere of Heights. May, p. 34.

The Teardown Artist An engineer keeps his clients one step ahead by taking a deep look into their competitors' products. August, p. 38.

Brown, Alan S.

Fair Game The spirit of play, business, or both make a destination of one of the world's technological showplaces. June, p. 35.

Heading Off Premature Failure New software can help you unearth design and manufacturing issues before they snowball into big warranty problems. August, p. 32.

Hip New World Once reserved for the aging, this achievement of mechanical engineering is offered to young adults who still want to jog, run, and play golf. October, p. 28.

Lies Your ERP System Tells You Enterprise resource planning has always had a hard time bridging the gap between corporate offices and the factory floor. Here's why. March, p. 36.

Maglev Goes to Work A mixer taking advantage of high-temperature superconductors enters the pharmaceutical market. June, p. 38.

MEMS Across the Valley of Death Microelectromechanical systems are taking the world by storm, but only a handful of aerospace applications are now flying. That may be about to change. April, p. 26.

More Than 12,000 Miles to the Gallon. January, p. 64.

Staying Alive Forget competing with China on price. These U.S. manufacturers have found ways to earn their bread. January, p. 22.

Storm Warning Katrina and Rita pummeled the Gulf of Mexico's oil and gas producers. What can they do to keep it from happening again? June, p. 24.

Tearing Down the Nearly Invisible What happens when simply lifting the lid can destroy the very thing you want to inspect? Reverse engineering in the silicon world presents all sorts of unique challenges. August, p. 34.

Tiny Tubes Tap Competitive Edge. September, p. 64.

Too Hot for Comfort As server power grows, so does the need to find more efficient ways to keep computers cool. December, p. 32.

Virtual OR Engineers are developing systems that enable future healers to practice surgery and other skills on model patients in simulated spaces. November, p. 32.

Connolly, John F.

One Step Back, One Giant Leap Forward For NASA engineers planning to send humans back to the moon, the best mission design was staring them right in the face. May, p. 26.

Decuzzi, Paolo, and Mauro Ferrari

Fantastic Voyages Nanodevices in development today promise to give medicine capabilities that were once purely in the realm of fiction. October, p. 24.

Easton, Peter

Finding More Water A desalination roadmap seeks technological solutions to make brackish water drinkable. September, p. 42.

Hutchinson, Harry

Easy on the Gas Research aims to make the land of the automobile run more efficiently. July, p. 26.

Heads Up. December, p. 80.

It's in the Timing Clean, fast, and compact, a means of destroying dangerous medical waste went years without takers. July, p. 42.

Keeping Above Water. October, p. 72.

NaCl of the Earth Salt deposits complicate the picture in the search for undersea oil; high-power computer imaging helps sort things out. March, p. 43.

No Strings Attached. June, p. 64.

An Open-Sesame for Budding Engineers. February, p. 64.

A Short Drive Into Space. March, p. 64.

To Get to the Other Side Sometimes you have to plan how to cross your bridges before you come to them. April, p. 40.

Kania, Eugene

Supply and Demand To manage resources, first know your people and their skills; then how many hours the workload will take. February, p. 25.

LaMarca, Robert

The Free Range Idealists or realists? Some big guns are taking a shot at open-source product development. March, p. 26.

Langston, Lee S.

Campus Heat One university decides to practice what it teaches about thermodynamics. December, p. 28.

Crown Jewels These crystals are the gems of turbine efficiency. February, p. 31.

Wild Blue Yonder After more than 50 years of intense research, designers are still pushing the gas turbine to new heights of performance. May, p. 36.

Lieuwen, Tim, and George Richards

Burning Questions Combustion research prepares for the more complex fuel supply of the near future. March, p. 40.

Miller, Scott, James Richmond, and Aron Bowman

Streamlined From the Start We've all heard manufacturing can go lean, but what about product development? March, p. 30.

Noor, Ahmed K., Robert Zubrin, and Douglas Stanley

A Step Closer to Mars It's a tall order, but within a generation technology will take humankind farther from home than we have ever gone before. November, p. 24.

Rorner, Ronald A.L.

Talking Back When bosses don't, or won't, communicate openly, what can we do? Try this—at your own risk. August, p. 30.

Selig, Bernie, and Gerry Eisenberg

Safety Skills A new ASME standard guides pipeline operators in making sure that personnel are up to the job. December, p. 42.

Serry, F. Michael

More Than a Feeling The atomic force microscope is enabling engineers to understand mechanical systems at the most basic level. April, p. 31.

Shakerin, Said

Water on Fire Engineering imagination lights up the fountain. January, p. 34.

Teska, Kirk

Does 4 Include 3? The disconnect between word and object becomes a puzzle for the courts. January, p. 32.

Thilmany, Jean

Ask the Supercomputer Many complex fluid flows still can't be analyzed today. Maybe tomorrow. April, p. 36.

Common Language Engineering information can make it over to accounting and marketing with the help of XML. December, p. 38.

A Fast Track Future engineers race through a video game to learn what computers can do. November, p. 36.

Get With the Plan How do projects get from point A to the end? Consult the blueprint. August, p. 26.

It's What You Know Data acquisition goes well beyond engineering—just ask a piano maker or an entomologist. June, p. 32.

Like Life Proponents say it's the next step in rapid prototyping: systems that reproduce their own kind and evolve. July, p. 38.

Metal Art. July, p. 64.

No Mesh, No Fuss A mechanical engineering researcher says that by doing away with the finite-element mesh, he has the answer to simultaneous design and analysis. May, p. 46.

Pros and Cons of CAD Computer-aided design is far from perfect, but still pretty great, these experts say. September, p. 38.

Searching Deeper After more than four decades investigating the ocean floor, the U.S. Navy's deepest-diving submersible is

about to be replaced. July, p. 44.

Translation Time Design and analysis programs don't speak the same language; getting around that can be costly. October, p. 34.

What the Robots See. April, p. 64.

Ventre, Jr., Louis

Disclosure vs. Claim A trap for the inventor arises when too much is said in the specification. February, p. 27.

Von Hippel, Frank N.

No Hurry to Recycle Some advocates believe no new nuclear power plants will be ordered until long-term storage has been addressed. But one proposed answer—fuel reprocessing—is too costly and complicated to embrace. May, p. 32.

Von Jouanne, Annette

Harvesting the Waves Researchers are closing in on how best to harness the power of the ocean. December, p. 24.

Wicks, Frank

No Einstein Overshadowed by a legendary mentor, Leo Szilard switched on the Atomic Age. November, p. 40.

Williams, Mark, and Scott Samuelsen

Beginning the Transformation When will efficient, high-temperature fuel cells finally emerge as the best choice for electrical generation? May, p. 40.

Winters, Jeffrey

Carbon Sunk. November, p. 64.

Clear and Cool Retrofitting a stadium with new escalators led to using a novel material. January, p. 37.

Efficiency Is Its Own Reward Building a green factory was intended to be a neighborly gesture, but it wound up making fundamental business sense. March, p. 33.

Juiced Up The next stage in the evolution of the hybrid car may involve an electrical outlet. July, p. 34.

No Small Risk As nanotech products race to the marketplace, researchers are still trying to determine if they could endanger human health. September, p. 30.

Power Window: Bright Ideas. December, p. 36.

Power Window: Two Paths. May, p. 44.

Punching Above Their Weight Smaller companies are discovering that product management tools can help their small staffs get a global reach. February, p. 22.

Wind Out of Their Sails Opposition to a project off Cape Cod poses big questions for offshore wind farms in the U.S. June, p. 30.

Wonder Cloth A film made from carbon nanotubes may finally live up to the nanotech hype. But first, it has to get out of the lab. April, p. 34.

Woods, Robert O.

Clear as Glass When the scientific revolution began in the 1600s, the lathe reshaped our view of the universe. October, p. 38.

Tally-Ho the Vacuum An idea whose time had not quite come. February, p. 28.